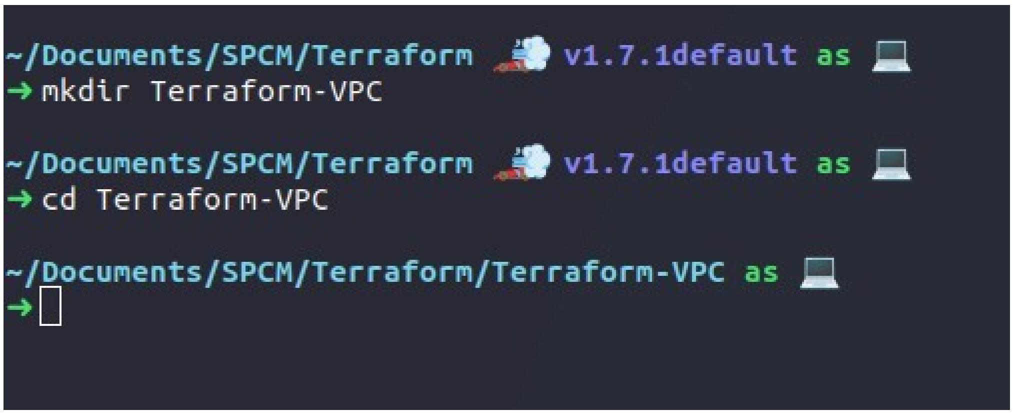
LAB-8

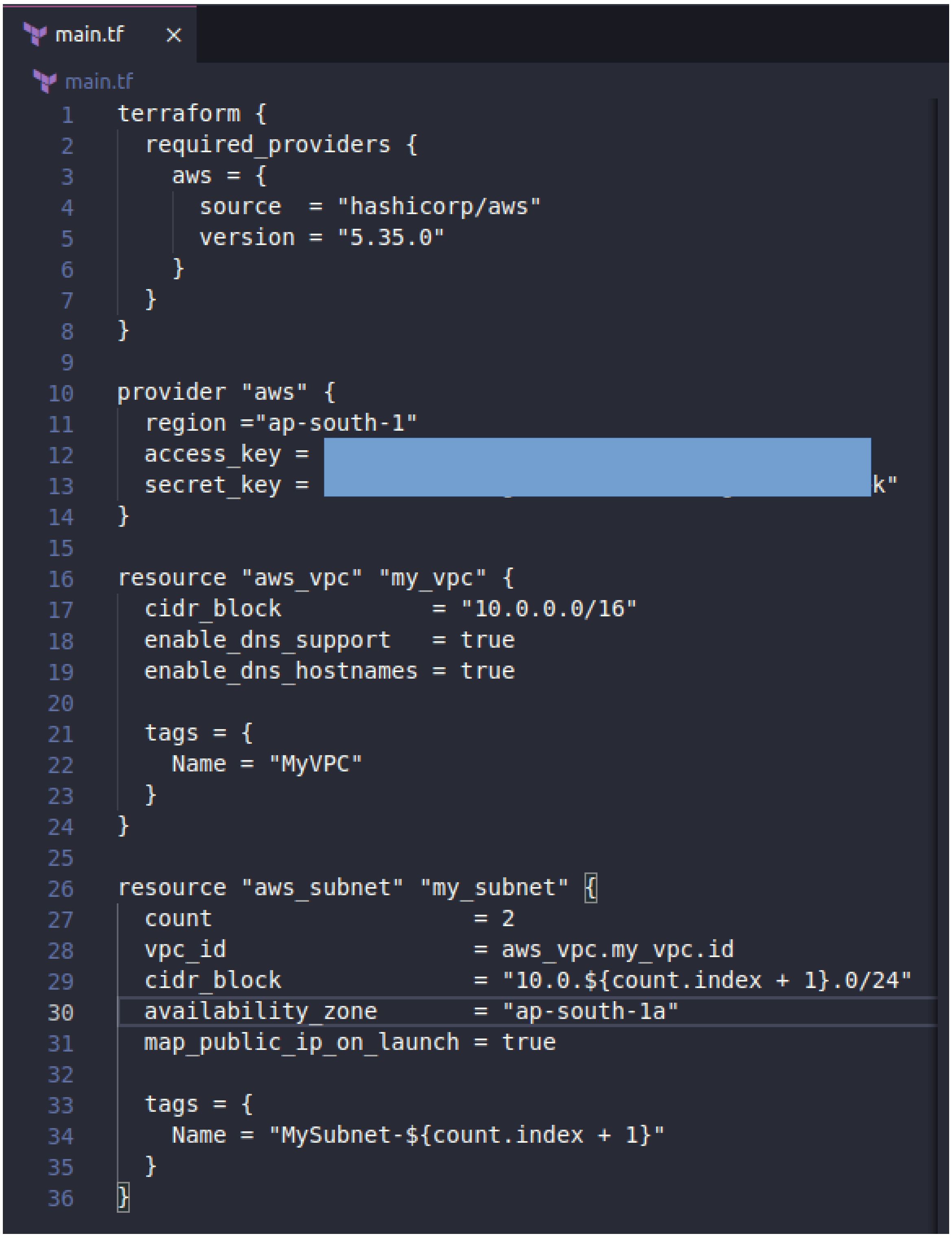
Creating a VPC in Terraform

Step 1: Create a Terraform-VPC Directory



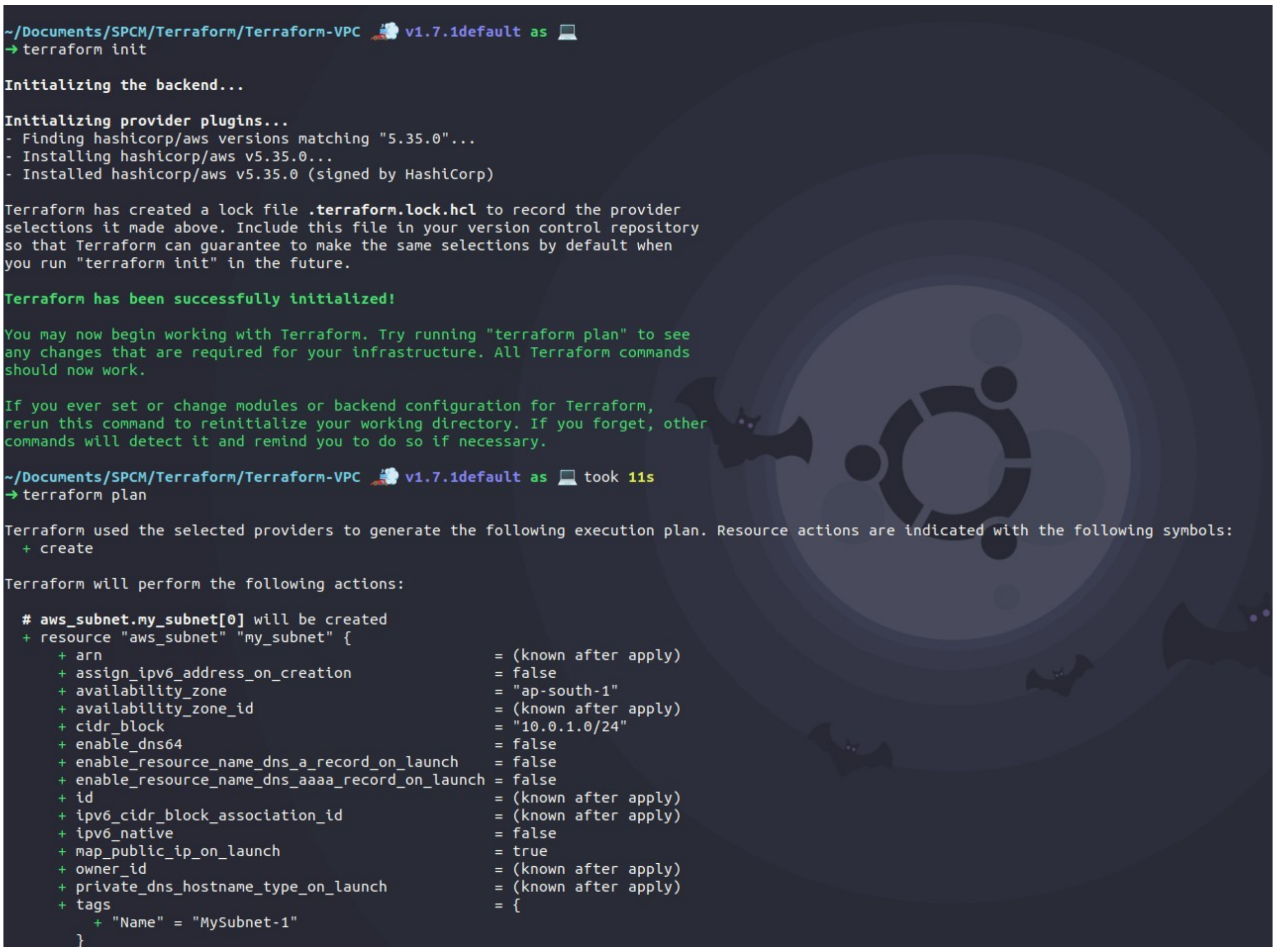
```
~/Documents/SPCM/Terraform  v1.7.1default as 💻
→ mkdir Terraform-VPC

~/Documents/SPCM/Terraform  v1.7.1default as 💻
→ cd Terraform-VPC

~/Documents/SPCM/Terraform/Terraform-VPC as 💻
→ 
```

Step 2: Create a main.tf



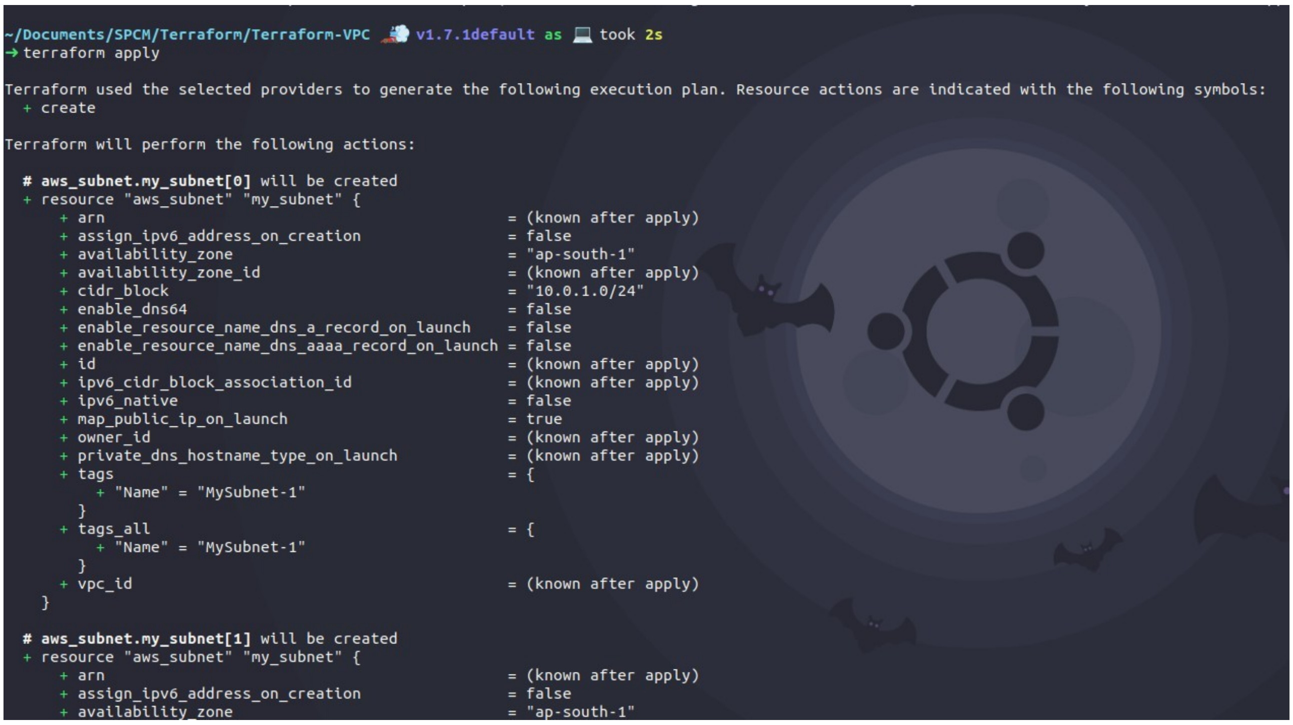
```
terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = "5.35.0"
    }
  }
}

provider "aws" {
  region ="ap-south-1"
  access_key = [redacted]
  secret_key = k"
}

resource "aws_vpc" "my_vpc" {
  cidr_block           = "10.0.0.0/16"
  enable_dns_support   = true
  enable_dns_hostnames = true

  tags = {
    Name = "MyVPC"
  }
}

resource "aws_subnet" "my_subnet" {
  count                   = 2
  vpc_id                  = aws_vpc.my_vpc.id
  cidr_block              = "10.0.${count.index + 1}.0/24"
  availability_zone       = "ap-south-1a"
  map_public_ip_on_launch = true

  tags = {
    Name = "MySubnet-${count.index + 1}"
  }
}
```

Step 3: Initialize and Plan



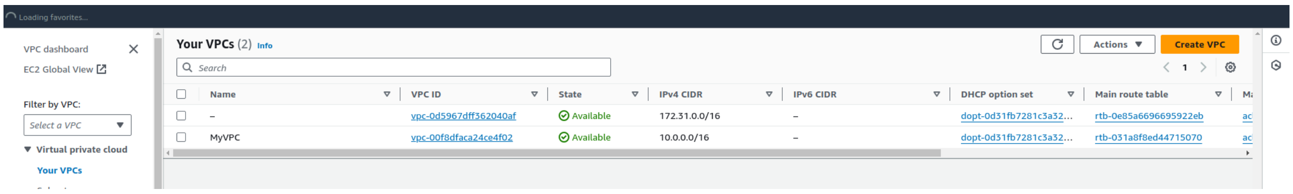
```
~/Documents/SPCM/Terraform/Terraform-VPC  v1.7.1default as 💻
➜ terraform init

Initializing the backend...

Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.35.0"...
- Installing hashicorp/aws v5.35.0...
- Installed hashicorp/aws v5.35.0 (signed by HashiCorp)

Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.

~/Documents/SPCM/Terraform/Terraform-VPC  v1.7.1default as 💻 took 11s
➜ terraform plan

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_subnet.my_subnet[0] will be created
  + resource "aws_subnet" "my_subnet" {
      + arn                                            = (known after apply)
      + assign_ipv6_address_on_creation                = false
      + availability_zone                              = "ap-south-1"
      + availability_zone_id                           = (known after apply)
      + cidr_block                                     = "10.0.1.0/24"
      + enable_dns64                                   = false
      + enable_resource_name_dns_a_record_on_launch    = false
      + enable_resource_name_dns_aaaa_record_on_launch = false
      + id                                             = (known after apply)
      + ipv6_cidr_block_association_id                 = (known after apply)
      + ipv6_native                                    = false
      + map_public_ip_on_launch                        = true
      + owner_id                                       = (known after apply)
      + private_dns_hostname_type_on_launch            = (known after apply)
      + tags                                           = {
          + "Name" = "MySubnet-1"
        }
```

Step 4: Apply terraform



```
~/Documents/SPCM/Terraform/Terraform-VPC  v1.7.1default as 💻 took 2s
➜ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_subnet.my_subnet[0] will be created
  + resource "aws_subnet" "my_subnet" {
      + arn                                            = (known after apply)
      + assign_ipv6_address_on_creation                = false
      + availability_zone                              = "ap-south-1"
      + availability_zone_id                           = (known after apply)
      + cidr_block                                     = "10.0.1.0/24"
      + enable_dns64                                   = false
      + enable_resource_name_dns_a_record_on_launch    = false
      + enable_resource_name_dns_aaaa_record_on_launch = false
      + id                                             = (known after apply)
      + ipv6_cidr_block_association_id                 = (known after apply)
      + ipv6_native                                    = false
      + map_public_ip_on_launch                        = true
      + owner_id                                       = (known after apply)
      + private_dns_hostname_type_on_launch            = (known after apply)
      + tags                                           = {
          + "Name" = "MySubnet-1"
        }
      + tags_all                                       = {
          + "Name" = "MySubnet-1"
        }
      + vpc_id                                         = (known after apply)
    }

  # aws_subnet.my_subnet[1] will be created
  + resource "aws_subnet" "my_subnet" {
      + arn                                            = (known after apply)
      + assign_ipv6_address_on_creation                = false
      + availability_zone                              = "ap-south-1"
```

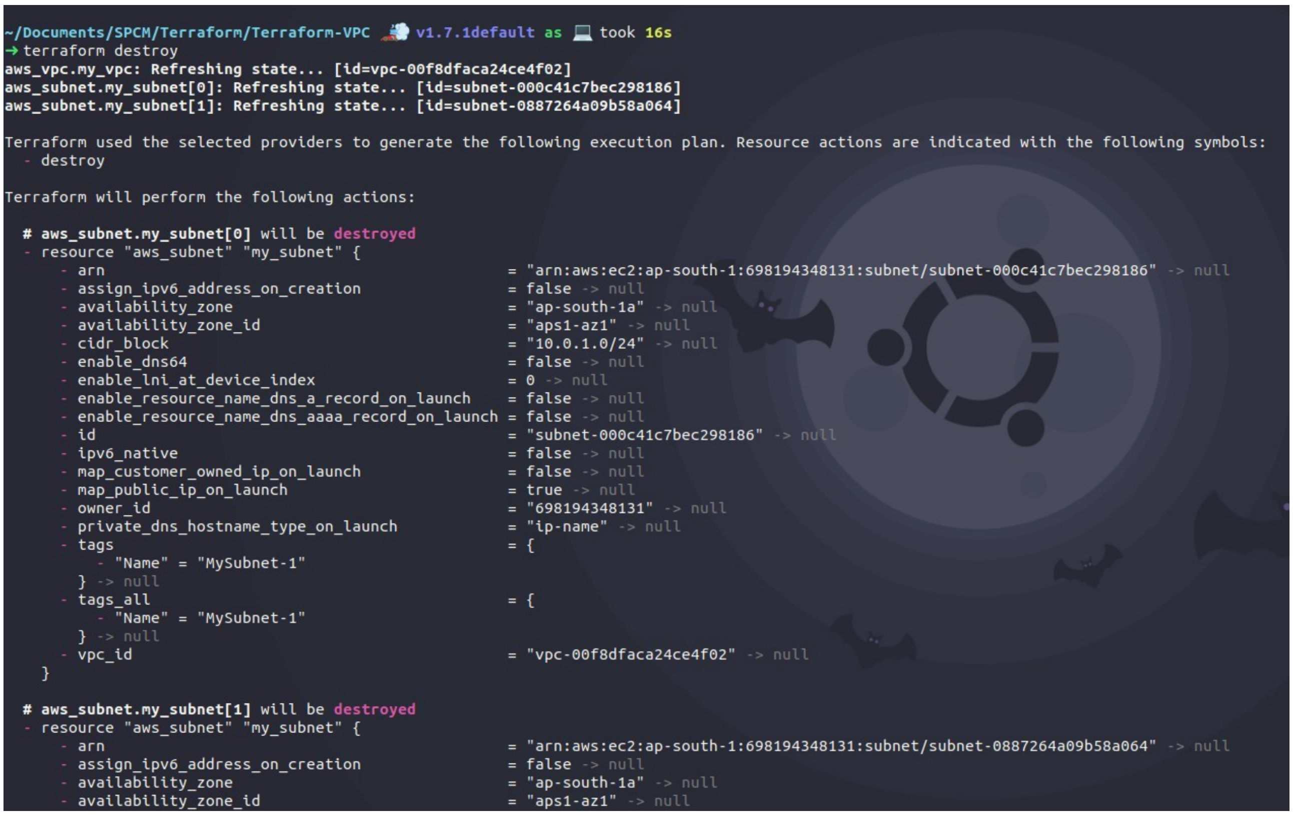
Step 5: Verify recources in AWS Console



Your VPCs (2) Info

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table	Ma
☐	–	vpc-0d5967dff362040af	Available	172.31.0.0/16	–	dopt-0d31fb7281c3a32...	rtb-0e85a6696695922eb	ac
☐	MyVPC	vpc-00f8dfaca24ce4f02	Available	10.0.0.0/16	–	dopt-0d31fb7281c3a32...	rtb-031a8f8ed44715070	ac

Step 7: Clean Up



```
~/Documents/SPCM/Terraform/Terraform-VPC  v1.7.1default as  took 16s
→ terraform destroy
aws_vpc.my_vpc: Refreshing state... [id=vpc-00f8dfaca24ce4f02]
aws_subnet.my_subnet[0]: Refreshing state... [id=subnet-000c41c7bec298186]
aws_subnet.my_subnet[1]: Refreshing state... [id=subnet-0887264a09b58a064]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  - destroy

Terraform will perform the following actions:

  # aws_subnet.my_subnet[0] will be destroyed
  - resource "aws_subnet" "my_subnet" {
      - arn                                            = "arn:aws:ec2:ap-south-1:698194348131:subnet/subnet-000c41c7bec298186" -> null
      - assign_ipv6_address_on_creation                = false -> null
      - availability_zone                              = "ap-south-1a" -> null
      - availability_zone_id                           = "aps1-az1" -> null
      - cidr_block                                     = "10.0.1.0/24" -> null
      - enable_dns64                                   = false -> null
      - enable_lni_at_device_index                     = 0 -> null
      - enable_resource_name_dns_a_record_on_launch    = false -> null
      - enable_resource_name_dns_aaaa_record_on_launch = false -> null
      - id                                             = "subnet-000c41c7bec298186" -> null
      - ipv6_native                                    = false -> null
      - map_customer_owned_ip_on_launch                = false -> null
      - map_public_ip_on_launch                        = true -> null
      - owner_id                                       = "698194348131" -> null
      - private_dns_hostname_type_on_launch            = "ip-name" -> null
      - tags                                           = {
          - "Name" = "MySubnet-1"
        } -> null
      - tags_all                                       = {
          - "Name" = "MySubnet-1"
        } -> null
      - vpc_id                                         = "vpc-00f8dfaca24ce4f02" -> null
    }

  # aws_subnet.my_subnet[1] will be destroyed
  - resource "aws_subnet" "my_subnet" {
      - arn                                            = "arn:aws:ec2:ap-south-1:698194348131:subnet/subnet-0887264a09b58a064" -> null
      - assign_ipv6_address_on_creation                = false -> null
      - availability_zone                              = "ap-south-1a" -> null
      - availability_zone_id                           = "aps1-az1" -> null
```

If you want to modify the VPC configuration, update the main.tf file with desired changes and rerun the terraform apply command to apply changes.